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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,423	11/28/2003	Gary Lorne MacIsaac	14534	7393

293 7590 06/06/2007
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EXAMINER	
YUEN, KAN	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
06/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

	Application No.	Applicant(s)	
	10/722,423	MACISAAC, GARY LORNE	
	Examiner	Art Unit	
	Kan Yuen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 November 2003_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-75_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-75_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _28 November 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _See Continuation Sheet_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :03/04/2004, 09/21/2004, 11/29/2005, 02/07/2006, 05/22/2007.

Detailed Action

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 38, and 39 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 38 and 39 lack the proper preamble for a computer readable medium claim. This subject matter is not limited to that which falls within a statutory category of invention because it is not limited to a process, machine, manufacture, or a composition of matter. Correction is required. An example of an acceptable preamble for a computer type claims is "A computer readable medium encoded with a computer executable instructions, the instructions comprising". For further information on statutory computer type claims, see MPEP section 2100.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 3-5, 11, 12, 15-22, 28, 34-37, 40-44, 49-51, 54-61, 67, 70-75 are rejected under 35 U.S.C. 102(b) as being anticipated by An (Pub No.: 2001/0040919).

In claim 1, An disclosed the method of receiving a first traffic waveform representing a time distribution of data volume in a first direction in the data communication system in a first period of time; producing a correlation value representing a correlation of the first traffic waveform with a reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values; producing a bandwidth anomaly signal when the correlation value satisfies a criterion (An see paragraph 0025, lines 1-8, and

paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126.

Regarding to claim 2, An also disclosed the method of wherein producing the bandwidth anomaly signal comprises producing the denial of service attack signal when the correlation value is less than a reference value (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126. The comparison result signal can be interpreted as the DDOS signal.

Regarding to claim 3, An also disclosed the method of wherein producing the bandwidth anomaly signal comprises determining whether the correlation value is less than the reference value (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126.

Regarding to claim 4, An also disclosed the method of receiving a second traffic waveform representing a time distribution of data volume in a second direction on the data communication system in a second period of time, and using the second traffic waveform as the reference waveform to produce the

correlation value (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the second waveform reference value is generated from 123.

Regarding to claim 5, An also disclosed the method of generating the first traffic waveform in response to a first set of traffic measurement values (An see fig. 1, unit 120, and see paragraph 0023, lines 1-8, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values, and output a result signal. Therefore, we can interpret that the result signal (first waveform) is generated based on sample and filtered values.

Regarding to claim 11, An also disclosed the method of the first traffic waveform represents a statistical measure of a time distribution of data volume in the first direction (An see fig. 1, unit 120, see fig. 2a, 2b, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20).

Regarding to claim 12, An also disclosed the method of monitoring data in the first direction and producing the first set of traffic measurement values in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first

comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding to claim 15, An also disclosed the method of monitoring the data in the first direction comprises at least one of: counting packets and counting octets, in the first direction (An see paragraph 0021, lines 1-10).

Regarding to claim 16, An also disclosed the method of causing a processor circuit operable to produce the first traffic waveform to communicate with at least one of a packet counter and an octet counter to receive values representing the first set of traffic measurement values (An see paragraph 0021, lines 1-10).

Regarding to claim 17, An also disclosed the method of causing the processor circuit to implement at least one of the packet counter and the octet counter (An see paragraph 0021, lines 1-10).

Regarding to claim 18, An also disclosed the method of passively monitoring the data in the first direction (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding to claim 19, An also disclosed the method of transmitting and receiving data from a data communication system, the data communication system method of claim 12 and further comprising signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8,

paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding to claim 20, An also disclosed the method of transmitting and receiving data from a data communication system, the data communication system method of claim 12 and further comprising controlling at least one of transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

Regarding to claim 21, An also disclosed the method of generating the first and second traffic waveforms in response to first and second sets of traffic measurement values, representing traffic in the first and second directions on the data communication system, respectively (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. First traffic is the sample value, and second traffic is the filter value.

Regarding to claim 22, An also disclosed the method of receiving the first and second traffic waveforms comprises receiving first and second waveforms representing first and second statistical measures of first and second time

distributions respectively of data volume in first and second directions in the data communications system (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values.

Regarding to claim 28, An also disclosed the method of monitoring data in the first and second directions and producing the first and second sets of traffic measurement values respectively in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, unit 122 and 123 are both monitoring the data, and each forwards the data to different paths. The paths can be first and second direction.

Regarding to claim 34, An also disclosed the method of passively monitoring the data in the first and second directions (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding to claim 35, An also disclosed the method of signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025,

lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding to claim 36, An also disclosed the method of controlling at least one of the transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

Regarding to claim 37, An also disclosed the method of means for receiving a first traffic waveform representing a time distribution of data volume in a first direction in the data communication system in a first period of time; means for producing a correlation value representing a correlation of the first traffic waveform with a reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values; and means for producing a bandwidth anomaly signal when the correlation value satisfies a criterion (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As

shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126.

Regarding to claim 40, An also disclosed the method of receive a first traffic waveform representing a time distribution of data volume in a first direction in the data communication system in a first period of time; produce a correlation value representing a correlation of the first traffic waveform with a reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values; and produce a bandwidth anomaly signal when the correlation value satisfies a criterion (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126.

Regarding to claim 41, An also disclosed the method of the processor circuit is configured to produce the bandwidth anomaly signal when the correlation value is less than a reference value (An see paragraph 0025, lines 1-

8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126. The comparison result signal can be interpreted as the DDOS signal.

Regarding to claim 42, An also disclosed the method of the processor circuit is configured to determine whether the correlation value is less than the reference value (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126. The comparison result signal can be interpreted as the DDOS signal.

Regarding to claim 43, An also disclosed the method of the processor circuit is configured to receive a second traffic waveform representing a statistical measure of a time distribution of data volume in a second direction on the data communication system in a second period of time, and use the second traffic waveform as the reference waveform to produce the correlation value (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the second waveform reference value generated from 123.

Regarding to claim 44, An also disclosed the method of a first traffic waveform generator operable to receive a first set of traffic measurement values and to produce the first traffic waveform in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding to claim 49, An also disclosed the method of the processor circuit is configured to implement the first traffic waveform generator (An see fig. 1, unit 120, and see paragraph 0023, lines 1-8, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values, and output a result signal. Therefore, we can interpret that the result signal (first waveform) is generated based on sample and filtered values.

Regarding to claim 50, An also disclosed the method of the first traffic waveform represents a statistical measure of a time distribution of data volume in the first direction (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that

the bit stream data is the first traffic waveform representing a time distribution of data volume.

Regarding to claim 51, An also disclosed the method of a communication interface operable to monitor data in the first direction and to produce the first set of traffic measurement values in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data interface.

Regarding to claim 54, An also disclosed the method of the communication interface includes at least one of a packet counter and an octet counter operable to count a corresponding one of packets and octets of data in the first direction (An see paragraph 0021, lines 1-10).

Regarding to claim 55, An also disclosed the method of the processor circuit is configured to communicate with the communication interface to receive values produced by at least one of a the packet counter and the octet counter, the values representing the first set of traffic measurement values (An see paragraph 0021, lines 1-10, and fig. 1 box 120). The unit 122 is the communication interface to receive values produce by the counter 121.

Regarding to claim 56, An also disclosed the method of the processor circuit is configured to implement the communication interface (An see paragraph 0021, lines 1-10, and fig. 1 box 120). The unit 122 is the communication interface to receive values produce by the counter 121.

Regarding to claim 57, An also disclosed the method of a passive monitor operable to passively monitor the data in the first direction and to provide a copy of the data in the first direction to the communication interface (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data interface.

Regarding to claim 58, An also disclosed the method of a signaling device for signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding to claim 59, An also disclosed the method of a communication control device for controlling at least one of the transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

Regarding to claim 60, An also disclosed the method of a traffic waveform generator operable to receive the first and second sets of traffic measurement values and to produce the first and second traffic waveforms in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021,

lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. First traffic is the sample value, and second traffic is the filter value. The first generator is the unit 122, and second generator is the unit 123.

Regarding to claim 61, An also disclosed the method of the processor is configured to receive first and second traffic waveforms representing first and second statistical measures of first and second time distributions respectively of data volume in first and second directions in the data communications system (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Sample value is the first traffic, and filter value is the second traffic.

Regarding to claim 67, An also disclosed the method of a communication interface operable to monitor data in the first and second directions and to produce the first and second sets of traffic measurement values respectively in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit

124 takes the difference between both values. Sample value is the first traffic, and filter value is the second traffic.

Regarding to claim 70, An also disclosed the method of the communication interface includes at least one of a packet counter and an octet counter operable to count a corresponding one of packets and octets of data for each of the first and second directions (An see paragraph 0021, lines 1-10).

Regarding to claim 71, An also disclosed the method of the processor circuit is configured to communicate with the communication interface to receive values produced by at least one of the packet counter and the octet counter, the values representing the first and second sets of traffic measurement values (An see paragraph 0021, lines 1-10).

Regarding to claim 72, An also disclosed the method of the processor circuit is configured to implement the communication interface (An see paragraph 0021, lines 1-10, and fig. 1 box 120). The unit 122 is the communication interface to receive values produce by the counter 121.

Regarding to claim 73, An also disclosed the method of a passive monitor operable to passively monitor the data in the first and second directions and to provide copies of the data to the communication interface (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding to claim 74, An also disclosed the method of operable to transmit and receive data from a data communication system, the data communication apparatus comprising the apparatus of claim 40 and further comprising a signaling device for signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding to claim 75, An also disclosed the method of a communication control device for controlling at least one of the transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

Claim Rejections - 35 USC § 103

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6, 8-10, 23, 25-27, 45, 47, 48,62, 64-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over An (Pub No.: 2001/0040919), in view of Gillberg et al. (Pat No.: 6393316).

For claim 6, An disclosed all the subject matter of the claimed invention with the exception of generating the first traffic waveform comprises subjecting the first set of traffic measurement values to a Discrete Wavelet Transform. Gillberg from the same or similar fields of endeavor teaches the method of generating the first traffic waveform comprises subjecting the first set of traffic measurement values to a Discrete Wavelet Transform (Gillberg et al. see column16, lines 15-40). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Gillberg et al. in the network of An. The motivation for using the method as taught by Gillberg et al. in the network of An being that as more accurate waveform can be constructed using 64 wavelet.

Regarding to claim 8, Gillberg also teaches the method of generating the first traffic waveform comprises causing the Discrete Wavelet Transform to produce a first component, the first component representing the first traffic

waveform (Gillberg et al. see column16, lines 15-40). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Gillberg et al. in the network of An. The motivation for using the method as taught by Gillberg et al. in the network of An being that as more accurate waveform can be constructed using 64 wavelet.

Regarding to claim 9, An also disclosed the method of producing the correlation value comprises correlating the first component with the reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sample value is the first component.

Regarding to claim 10, An also disclosed the method of using a processor circuit to generate the first traffic waveform and to correlate the first traffic waveform with the reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values.

Regarding to claim 23, Gillberg also teaches the method of generating the first and second traffic waveforms comprises subjecting the first and second sets of traffic measurement values respectively, to a Discrete Wavelet Transform (Gillberg et al. see column16, lines 15-40).

Regarding to claim 25, Gillberg also teaches the method of causing the Discrete Wavelet Transform to produce a first component, representing the first traffic waveform and a second component representing the second traffic waveform (Gillberg et al. see column16, lines 15-40).

Regarding to claim 26, An also disclosed the method of producing the correlation value comprises correlating the first and second components (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the sample value is the first component, and the filtered valued is the second component.

Regarding to claim 27, An also disclosed the method of comprising implementing a traffic waveform generator in a processor circuit used to produce the correlation value (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that

the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values.

Regarding to claim 45, Gillberg et al. also disclosed the method of the first traffic waveform generator is configured to produce the first traffic waveform by subjecting the first set of traffic measurement values to a Discrete Wavelet Transform (Gillberg et al. see column16, lines 15-40).

Regarding to claim 47, Gillberg et al. also disclosed the method of the first traffic waveform generator is configured to cause the Discrete Wavelet Transform to produce a first component, the first component representing the first traffic waveform (Gillberg et al. see column16, lines 15-40).

Regarding to claim 48, An also disclosed the method of the processor circuit is configured to produce the correlation value by correlating the first component with the reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sample value is the first component.

Regarding to claim 62, Gillberg et al. also disclosed the method of the traffic waveform generator is configured to produce the first and second traffic waveforms by subjecting the first and second sets of traffic measurement values respectively, to a Discrete Wavelet Transform (Gillberg et al. see column16, lines 15-40).

Regarding to claim 64, Gillberg et al. also disclosed the method of the traffic waveform generator is configured to cause the Discrete Wavelet Transform to produce a first component, representing the first traffic waveform and a second component representing the second traffic waveform (Gillberg et al. see column16, lines 15-40).

Regarding to claim 65, An also disclosed the method of the processor circuit is configured to produce the correlation value by correlating the first and second components (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the sample value is the first component, and the filtered valued is the second component.

Regarding to claim 66, An also disclosed the method of the processor circuit is configured to implement the traffic waveform generator (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the sample value is the generator.

8. Claims 7, 24, 46, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over An (Pub No.: 2001/0040919), in view of Gillberg et al. (Pat No.: 6393316), as applied to claim 6 above, and further in view of Sahinoglu et al. (Pub No.: 2003/0021295).

For claim 7, An and Gillberg et al. disclosed all the subject matter of the claimed invention with the exception of subjecting the first set of traffic measurement values to the Discrete Wavelet Transform comprises using Haar wavelet filter coefficients in the Discrete Wavelet Transform. Sahinoglu et al. from the same or similar fields of endeavor teaches the method of subjecting the first set of traffic measurement values to the Discrete Wavelet Transform comprises using Haar wavelet filter coefficients in the Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Sahinoglu et al. in the network of An and Gillberg et al. The motivation for using the method as taught by Sahinoglu et al. in the network of An and Gillberg et al. being that it allocates the communication bandwidth based on the short and long term fluctuations in the incoming traffic patter.

Regarding to claim 24, Sahinoglu et al. also teaches the method of subjecting the first and second sets of traffic measurement values to the Discrete Wavelet Transform comprises using Haar wavelet filter coefficients in the Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6).

Regarding to claim 46, Sahinoglu et al. also teaches the method of the first traffic waveform generator is configured to use Haar wavelet filter coefficients in the Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6).

Regarding to claim 63, Sahinoglu et al. also teaches the method of the traffic waveform generator is configured to use Haar wavelet filter coefficients in the Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6).

9. Claims 13,14, 29, 30, 52, 53, 68, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over An (Pub No.: 2001/0040919), in view of Eglin (Pub No.: 2004/0047320).

For claim 13, An disclosed all the subject matter of the claimed invention with the exception of producing the first set of traffic measurement values comprises producing values representing a property of an Ethernet statistics group in a remote monitoring protocol. Eglin from the same or similar fields of endeavor teaches the method of producing the first set of traffic measurement values comprises producing values representing a property of an Ethernet statistics group in a remote monitoring protocol (Eglin see paragraph 0005, lines 1-4, and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol using Ethernet interfaces, which can be Ethernet statistics group. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught

by Eglin in the network of An. The motivation for using the method as taught by Eglin in the network of An being that Ethernet is low risk and low cost component but still perform very high speed transmission in the network.

Regarding to claim 14, Eglin also teaches the method of causing a processor circuit operable to produce the first traffic waveform to communicate with a communication interface to receive the values representing the property of an Ethernet statistics group (Eglin see paragraph 0005, lines 1-4, and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol using Ethernet interfaces, which can be Ethernet statistics group.

Regarding to claim 29, Eglin also teaches the method of producing the first and second sets of traffic measurement values comprises producing values representing a property of an Ethernet statistics group in a remote monitoring protocol, for each of the first and second directions (Eglin see paragraph 0005, lines 1-4, and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol using Ethernet interfaces, which can be Ethernet statistics group.

Regarding to claim 30, Eglin also teaches the method of causing a processor circuit operable to produce the first and second traffic waveforms to communicate with a communication interface to receive the values representing a property of an Ethernet statistics group (Eglin see paragraph 0005, lines 1-4, and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol.

Regarding to claim 52, Eglin also teaches the method of the communication interface produces values representing a property of an Ethernet statistics group in a remote monitoring protocol (Eglin see paragraph 0005, lines 1-4, and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol.

Regarding to claim 53, Eglin also teaches the method of the processor circuit is configured to communicate with the communication interface to receive the values representing a property of an Ethernet statistics group, the values representing the first set of traffic measurement values (Eglin see paragraph 0005, lines 1-4, and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol.

Regarding to claim 68, Eglin also teaches the method of the communication interface produces values representing a property of an Ethernet statistics group in a remote monitoring protocol, for each of the first and second directions (Eglin see paragraph 0005, lines 1-4, and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol.

Regarding to claim 69, Eglin also teaches the method of the processor circuit is configured to communicate with the communication interface to receive the values representing a property of an Ethernet statistics group, for each of the first and second directions, the values representing the first and second sets of traffic measurement values respectively (Eglin see paragraph 0005, lines 1-4,

and see paragraph 0039, lines 1-10). The wireless protocol designated 802.11b can be the remote monitoring protocol.

10. Claims 31-33, 38, and 39 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over An (Pub No.: 2001/0040919).

For claim 31, An disclosed the method of monitoring the data comprises at least one of: packet counters and octet counters in each of the first and second directions (An see paragraph 0021, lines 1-10). Although the reference did not teach counter in first and second directions, however an official notice is taken; counting data in forward and reverse directions is obvious to the person of ordinary skill in the art. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method of obviousness in the network of An. The motivation for using the method of obviousness in the network of An being that it provides double counting method which greatly improves the accuracy of the transmission.

Regarding to claim 32, An also disclosed the method of causing a processor circuit operable to produce the first and second traffic waveforms to communicate with at least one of a packet counter and an octet counter to receive values representing the first and second sets of traffic measurement values (An see paragraph 0021, lines 1-10). Although the reference did not teach the second waveform communicating with the counter, however its obvious to the

person of ordinary skill in the art the produce the second waveform and to communicate with the counter.

Regarding to claim 33, An also disclosed the method of causing the processor circuit to implement at least one of the packet counter and the octet counter (An see paragraph 0021, lines 1-10).

Regarding to claim 38, An also disclosed the method of computer readable medium encoded with codes for directing a processor circuit to detect bandwidth anomalies in a data communication system, by receiving a first traffic waveform representing a time distribution of data volume in a first direction in the data communication system in a first period of time; producing a correlation value representing a correlation of the first traffic waveform with a reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values; and producing a bandwidth anomaly signal when the correlation value satisfies a criterion (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the

comparison result signal to unit 126. Although the reference did not disclose the method of computer readable medium code, however it obvious to the person of ordinary skill in the art to produce a code to perform such task.

Regarding to claim 39, An also disclosed the method of computer readable signal encoded with codes for directing a processor circuit to detect bandwidth anomalies in a data communication system, by receiving a first traffic waveform representing a time distribution of data volume in a first direction in the data communication system in a first period of time; producing a correlation value representing a correlation of the first traffic waveform with a reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values; and producing a bandwidth anomaly signal when the correlation value satisfies a criterion (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126. Although the reference did not disclose the

method of computer readable medium code, however it obvious to the person of ordinary skill in the art to produce a code to perform such task.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. Downey et al. (Pat No.: 5553081), and Zalitzky et al. (Pub No.: 2004/0037317) are show systems which considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-2413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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